LG LOW VOLTAGE AIR CIRCUIT BREAKERS

- Passed the KEMA Test
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LG Industrial Systems

LG LOW VOLTAGE AIR CIRCUIT BREAKERS

ISO 9001, ISO14001

LG Low Voltage
Air Circuit Breakers

LBA-A Type

LG
LOW VOLTAGE
AIR CIRCUIT
BREAKERS

1600A, 500V, 65kA

3150A, 500V, 85kA

According to IEC 947-2

Passed the KEMA Test

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Features LBA-A Type has the following features.

The terminal of the control circuit on the front enables easy handling.

Optimized design for efficient panel board.

- Two standardized heights and depths for each type (fixed type and draw-out type.)
- Four standardized external dimensions
  (630, 800, 1000, 1250, 1600AF / 2000, 2500AF / 3200AF / 4000,5000AF).
- Light weight contributes to easy installation into the board.

Standard Ampere Frame & Poles.

- 630AF, 800AF, 1000AF, 1250AF, 1600AF, 2000AF, 2500AF, 3200AF, 4000AF, 5000AF.
- Every type is available as 3 -pole or 4-pole.

Standard manual connection. (Auto connection optional)

Easy and safe handling of draw-out type with rail.

Variety of accessories (refer to page 10).

Economic product containing a large element of customer inputs right from the design stage.

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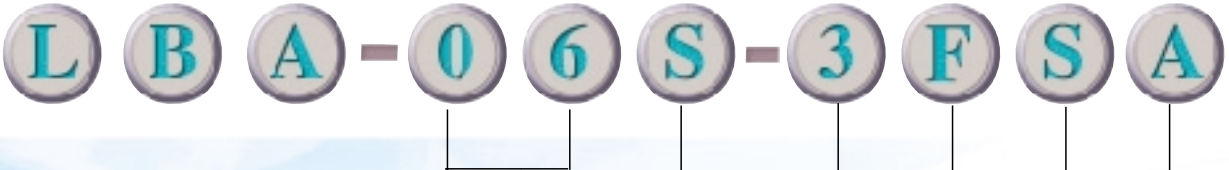
Type Selection



Type code

S	OCR(O)
N	OCR(×)

Mounting configuration type

P	Fixed type
E	E class cradle
F	F2 class cradle

* F types have cradle with shutter.

Number of poles

3	Pole
4	Pole

Rated current

0	**6**	630A
0	**8**	800A
1	**0**	1000A
1	**3**	1250A
1	**6**	1600A
2	**0**	2000A
2	**5**	2500A
3	**2**	3200A
4	**0**	4000A
5	**0**	5000A

S	Standard
E	Economic

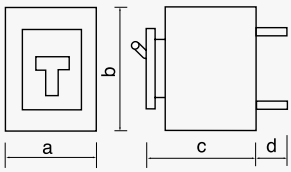
* **For further information refer to page 22, 23**

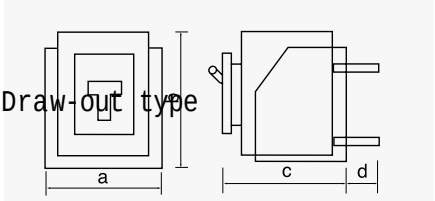
Ratings

Type			LBA-06A	LBA-08A	LBA-10A	LBA-13A	LBA-16A	LBA-20A	LBA-25A	LBA-32A	LBA-40A	LBA-50A
Frame Current (A)			630	800	1,000	1,250	1,600	2,000	2,500	3,200	4,000	5,000
Rated Insulation Voltage (V)			660	660	660	660	660	660	660	660	660	660
Rated Operation Voltage (V)			660	660	660	660	660	660	660	660	660	660
Number of Poles			3 4	3 4	3 4	3 4	3 4	3 4	3 4	3 4	3 4	3 4
Rated Current of Trip Relay (A)			630-504-378 315-252-189 126-101-76	800-640-480	1000-800-600 500-400-300 200-160-120	1250-1000-750 630-504-378 500-400-300	1600-1280-960 1000-800-600 500-400-300	2000-1600-1200	2500-2000-1500	3200-2500-1920 2000-1600-1200 1000-800-600	4000-3200-2400 2000-1600-1200	5000-4000-3000
Rated Current of Neutral Pole(A)			630	800	1,000	1,250	1,600	1,600	1,600	1,600	2,500	2,500
Rated Short-Curcuit Breaking Capacity (kA r.m.s, Symmetrical)/ Making Capacity (kA peak values) P-2(O-CO-CO)	IEC	AC660V	30/63	30/63	30/63	30/63	42/88.2	42/88.2	42/88.2	50/105	65/143	65/143
	BS	AC600V	42/88.2	42/88.2	42/88.2	42/88.2	50/105	50/105	50/105	65/143	85/187	85/187
	VDE	AC500V	50/105	50/105	50/105	50/105	65/143	65/143	65/143	85/187	100/220	100/220
	NEMA	AC600V	42/96.6	42/96.6	42/96.6	50/115	50/115	50/115	50/115	65/149.5	85/195.5	85/195.5
	ANSI	AC480V	50/115	50/115	50/115	65/149.5	65/149.5	65/149.5	65/149.5	85/195.5	100/230	100/230
	KS	AC550V	42/88.2	42/88.2	42/88.2	50/105	50/105	50/105	50/105	65/143	85/195.5	85/195.5
	JEC	AC460V	50/105	50/105	50/105	65/143	65/143	65/143	65/143	85/195.5	100/230	100/230
	LR	AC660V	30/63	30/63	30/63	48/88.2	42/88.2	42/88.2	42/88.2	50/105	-	-
		AC600V	42/88.2	42/88.2	42/88.2	50/105	50/105	50/105	50/105	65/143	88.1/211	88.1/211
		AC500V	50/105	50/105	50/105	65/143	65/143	65/143	65/143	85/195.5	105/256	105/256
	KR	AC500V	50/105	50/105	50/105	63/138.6	63/138.6	63/138.6	63/138.6	80/176	100/251	100/251
Rated Short Time Current (kA/1s)			42	42	42	50	50	50	50	65	85	85
Total Breaking Time (s)			0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05
Closing Time (s)			0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.08	0.08
Number of operating cycles	Current conductive		3,000	3,000	3,000	3,000	3,000	3,000	3,000	2,000	1,000	1,000
	Current not conductive		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000

Exterior Dimensions (m m)

Fixed type





Type	Fixed Type								Draw-out Type							
	3Pole				4Pole				3Pole				4Pole			
	a	b	c	d	a	b	c	d	a	b	c	d	a	b	c	d
LBA-06A	295	424	374	35	380	424	374	35	343	459	472	35	428	459	472	35
LBA-08A																
LBA-10A																
LBA-13A																
LBA-16A																
LBA-20A	430				515				478				563			
LBA-25A																
LBA-32A	536				621				584				669			
LBA-40A	687			85	817			85	742	521	528	80	872	521	528	80
LBA-50A																

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Design features & Structure

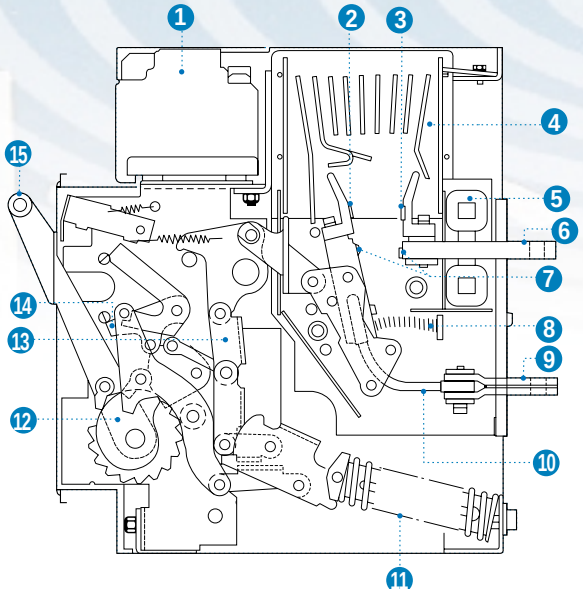
Fixed Type

1. Trip relay part
2. Charge handle
3. "Open" button
4. "Close" "Open" indicator
5. "Close" button
6. "Charge" indicator

Draw-out Type

1. Arc chamber
2. Auto connection contacts
3. Draw-out rail

1. Trip relay device
2. Arc contact(moving)
3. Arc contact(fixed)
4. Arc chamber
5. CT
6. Main connector
7. Main contact
8. Contact spring
9. Load connector
10. Moving conduct
11. Charging spring
12. Charging device
13. Link device
14. Trip device
15. Charging handle



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Mounting Configurations

Select Fixed Type or Draw-out Type

Fixed Type

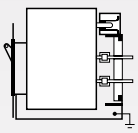
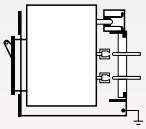
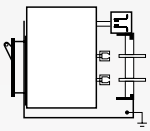
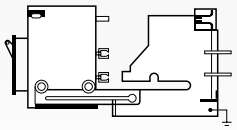
- Compact design
- Direct fixing construction
- Compact design reduces panel board size

Draw-out Type

- Easy maintenance and inspection
- The draw-out rail is stored in the cradle
- Safety shutter
- Position S/W indicates “Connected” “Test” “Disconnected” “Draw-out” Position
- Short- Circuit “b” Contact

–Keep the control circuit on by closing the “b” contact.

Positions of Draw-out Type

Connected Position		• Main circuit and control circuit are connected. (Manual connection) • Normal operation condition
Test Position		• Main circuit disconnected, control circuit connected. • Testing is possible with the panel door closed.
Disconnected Position		• Main circuit and control circuit are disconnected. (Manual disconnected) • Panel door can be closed.
Draw-out Position		• The breaker can be removed in this position. • The breaker can be removed from the cradle by use of the extension rails.

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Operation

Select Manual Charging Type or Motor Charging Type

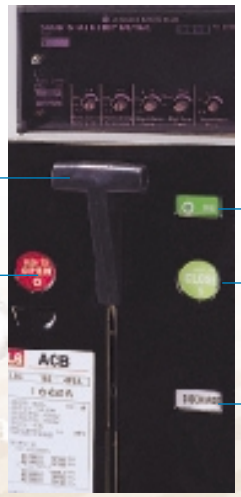
Manual Charging Type

For closing, first charge the spring by using the charging handle and then press the close button. For opening, an open button disconnects the circuit.

- If the closing spring is fully charged, the charge indicator indicates “CHARGED”.
- The buttons lock automatically so that the open and close buttons can not be operated at the same time.
- Main contacts status of main circuit is indicated by ‘CLOSE’ or ‘OPEN’.

Motor Charging Type

Closing is performed by a closing spring which is remotely controlled. Pressing the charges button activates a motor that automatically charges the closing spring, which then closes the breaker. Motor charging and electrical closing is permitted between 85% and 110% of the rated voltage.



- Manual charging operation can also be performed.
- With breaker closed, charging is possible by manual action, but motor charging of closing spring can not be performed.
- With the open button pressed, closing operation can not be performed (electrical and mechanical lock).
- Closing operation can not be performed when off-lock is being used (electrical and mechanical lock).
- Circuit to prevent pumping is included (electrical lock).
- Caution is required, because lower closing signal voltage may reset pumping prevention circuit.
- Closing operation should follow at least one second after completion of charge.

●Ratings of motor charging

Minimum operating : 300VA

Rated Voltage (V)		Inrush Current (A)	Continuous Current (A)	Charging Time (s)
AC 50/60Hz	100~110V	10.5	3	Max.3
	120V	11	3	
	200~220V	6	1.5	
	240V	7	1.5	
DC	100~125V	11	4	

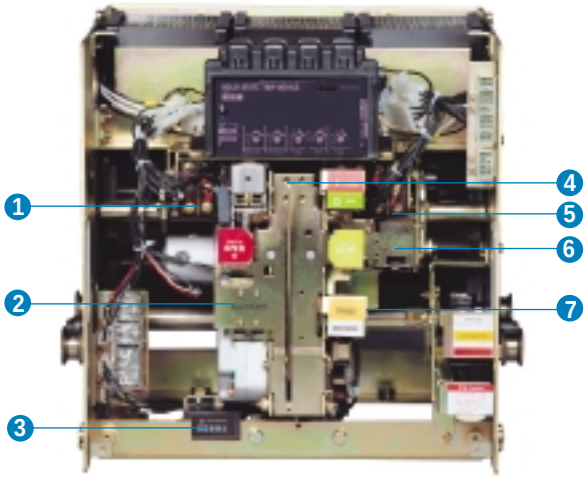
Power Source	Resetting Voltage
AC	50%
DC	20%

●Ratings of closing coil

Rated Voltage (V)		Inrush Current (A)	Closing Time (ms)
AC 50 / 60Hz	100~110V	5.5	Max. 60 (Contact time)
	120V	5.5	
	200~220V	5	
	240V	5	
DC	100~125V	5	

Optional Accessories

Installation location can be accessed from the front for easy maintenance and inspection.



1. Auxiliary Switch (AX)
2. Shunt Tripping Device (SHT)
3. Open-Close Counter (CNT)
4. Lockout Coil (LC)
5. Auxiliary Switch (AX)
6. Undervoltage Tripping Device (UVT)
7. OCR Alarm Switch (AL)

The Trip Relay (OCR) Alarm Switch (AL)

OCR alarm switch is an accessory needed if over current trip relay is required. The OCR alarm switch (AL) electrically alarms when breaker is tripped by trip relay activation.

This is activated by long-delay, short-delay and instantaneous tripping. However, it is not activated by ground-fault tripping, open button, undervoltage and shunt tripping devices.

It is an instantaneous action (15ms), so that the alarm circuit needs a self-holding circuit.

● **Alarm switch operating**

Breaker Condition	"a"contact
∗Tripped either by long-delay, short-delay or instantaneous tripping	On
∗Tripped either by the OPEN button, SHT,UVT or ground-fault tripping	Off
Open	
Close	

Auxiliary Switch (AX)

The auxiliary switch, which is installed in the breaker, displays the status of the breaker, either 'CLOSED' or 'OPEN'.

- 3a3b is standard, maximum 4a4b.
- Special use (Maximum)
  - -Motor charging type : 4a3b
  - -Shunt trip device type : 3a4b
  - -Both of the above types : 3a3b

Breaker condition	"a" Contact	"b" Contact
Close	On	Off
Open	Off	On

● Ratings of AX and AL contacts

	AC			DC		
	Rated Voltage (V)	Current(A) Resistive load	Current(A) Inductive load	Rated Voltage (V)	Current(A) Resistive load	Current(A) Inductive load
Contact Ratings	460	5	2.5	250	5	3
	250	10	10	125	10	6
	125	10	10	30	10	10

Counter(CNT)

The counter mechanically indicates the number of operations of the breaker, counting at each closing operation.

Optional Accessories

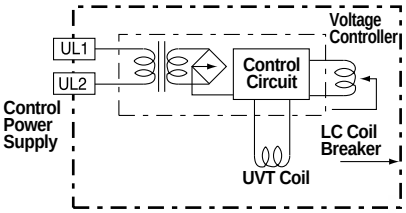
Undervoltage Tripping Device (UVT)

The undervoltage tripping device (UVT), with UVT coil, lock-out coil and voltage controller, is installed in the breaker to automatically trip if the control power voltage is dropped below the drop-out voltage.
The voltage controller controls the voltage supplied to UVT coil and lockout coil.

- Cooperative action is allowed, because UVT coil and lockout coil can be simultaneously picked up and dropped out.

Type	Instantaneous	UVT-S	
	0.5S Delay	UVT-05S	
Rated Voltage		Pick-up Voltage	Drop-out Voltage
AC 100V~120V		70V~80V	40V~60V
AC 200V~240V		140V~170V	80V~120V
AC 380V~460V		266V~323V	152V~228V

- Two options are available: 0.5 second delayed action or instantaneous action when the UVT control voltage falls below the drop-out voltage.
- The Drop-out voltage remains the same regardless of the frequency due to the conversion into DC.



Lockout Coil (LC)

Even when the UVT is activated, the Air Circuit Breaker, may instantaneously come into contact by the closing spring force. A lockout coil prevents this by anti-electrical and mechanical closing action if voltage is lower than the drop-out voltage.

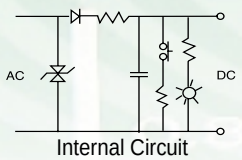
- Pick-up voltage and drop-out voltage are controlled by voltage controller

- When UVT is specified, lockout coil is also included. It is possible to specify the lockout coil only.

Rated Voltage	Pick-up Voltage	Drop-out Voltage
AC 100~120V	70V~85V	40V~60V
AC 200~240V	140V~170V	80V~120V
AC 380~460V	266V~323V	152V~228V

Condenser Tripping Device (CTD)

This device enables breaker opening within a definite time by remote electrical operation, even when there is no control power supply. This device is combined with a SHT tripping device.



Internal Circuit

Type	CTD-100	CTD-200
Rated Input Voltage (V)	AC100/110	AC200/220
Rated Frequency (Hz)	50/60	50/60
Rated Charging Voltage (V)	145/145	280/310
Charging Time	5s (max)	5s (max)
Tripping Time Capacity	3m (min)	2m (min)
Applicable SHT Voltage (V)	DC 100/110	DC 200/220
Voltage Fluctuation	85~110%	85~110%

*CTD is installed outside of the Air Circuit Breaker.

Shunt Tripping Device (SHT)

The shunt tripping device (SHT) trips the breaker remotely by electric signal.
The shunt tripping device utilizes auxiliary switch (1a) to prevent damage.
Tripping is permitted between 70% and 110% of rat.

●AC

Rated Voltage	Inrush Current Peak(A)	Operating Time(ms)
100~125	5.5	40
200~220	2.0	40
240	2.0	40

●DC

Rated Voltage	Inrush Current Peak(A)	Operating Time (ms)
100~125	5	40

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Trip Relay (OCR)

Solid-state trip device characteristics and combinations

Type

Combinations		LBA-06A	LBA-08A	LBA-10A	LBA-13A	LBA-16A	LBA-20A	LBA-25A	LBA-32A	LBA-40A	LBA-50A
S-A	L S I	•	•	•	•	•	•	•	•	•	•
ST-A	L I	•	•	•	•	•	•	•	•	•	•
	S I	•	•	•	•	•	•	•	•	•	•
	I	•	•	•	•	•	•	•	•	•	•
SGT-A	L S I — G	•	•	•	•	•	•	•	•	•	•
	L I — G	•	•	•	•	•	•	•	•	•	•
	S I — G	•	•	•	•	•	•	•	•	•	•
	I — G	•	•	•	•	•	•	•	•	•	•

S-A	Over current protection(standard)
ST-A	Over current protection,Trip indicator(LED)
SGT-A	Over current protection,Trip indicator(LED),Ground-fault protection

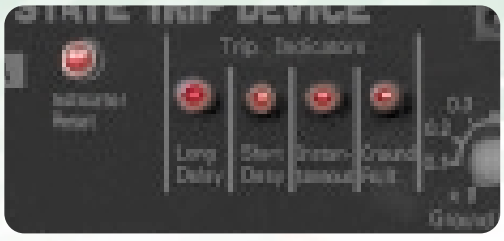
Note (L) Long time delay (S) Short time delay
(I) Instantaneous (G) Ground-fault

Trip Indicator(T)

The trip indicator consists of the lamps which display trip state of the breaker (long-delay, short-delay, instantaneous and ground-fault trip)
To reset the trip indicator, push the reset button on the front of the trip relay or cut the control power.

- Control power is needed (refer to the below chart)

●Feature of Trip Indicator



Ground-fault protection(G)

Take adequate precautions since the following conditions are present when the ground fault protection is needed.

- The OCR alarm switch will not operate when the ground fault protection is tripped. If needed, please use the indicator contact.
- The ground-fault protection and the shunt tripping device use the same control power.

●Control Power

Type	Control power supply (power consumption:2VA)	
	Ground-Fault Protection	Trip Indicator
S-A	-	-
ST-A	-	AC100-120V/200-240V, DC100-110V/125V
SGT-A	AC100~120V/200~240V,DC100~110V/125V	

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Abundant Protections

1	**Rated current**	• Adjustable in 3 steps : 60, 80 or 100 % of the frame current.
2	**Ampere setting continuous**	• The current which the solid-state trip device can carry continuously • Adjustable in 3 steps : 80, 90 or 100 % of the rated current.
3	**Long-delay pick-up current**	105-120 % of the ampere setting continuous.
4	**Long-delay tripping time**	100 seconds at 200 % of the ampere setting continuous.
5	**Short-delay pick-up current**	Adjustable in 4 steps (LBA 06~32), 3steps(LBA40~50)of the rated current.
6	**Short-delay tripping time**	Adjustable in 3 steps: max., med., or min. Refer to the characteristics curve.
7	**Instantaneous pick-up current**	Adjustable in 4 steps of the rated current.
8	**Ground-fault pick-up current**	Adjustable in 4 steps (LBA06~32), 3steps(LBA40~50)of the rated current.
9	**Ground-fault tripping time**	Adjustable in 2 steps: 0.3 sec or 0.8 sec.

Type	Frame size(A)	Rated maximum current(A)	Rated current setting(A)			Ground-fault pick-up current setting(A)			
			60 %×If	80 %×If	100 %×If	10 %×If	20 %×If	30 %×If	50 %×If
LBA-06A	630	630	378	504	630	63	126	189	315
		315	189	252	315	31.5	63	94.5	157.5
		126	75.6	100.8	126	12.6	25.2	37.8	63
LBA-08A	800	800	480	640	800	80	160	240	400
LBA-10A	1000	1000	600	800	1000	100	200	300	500
		500	300	400	500	50	100	150	250
		200	120	160	200	20	40	60	100
LBA-13A	1250	1250	750	1000	1250	125	250	375	625
		630	378	504	630	63	126	189	315
		500	300	400	500	50	100	150	250
		250	150	200	250	25	50	75	125
LBA-16A	1600	1600	960	1280	1600	160	320	480	800
		1000	600	800	1000	100	200	300	500
		500	300	400	500	50	100	150	250
LBA-20A	2000	2000	1200	1600	2000	200	400	600	1000
LBA-25A	2500	2500	1500	2000	2500	250	500	750	1250
LBA-32A	3200	3200	1920	2560	3200	320	640	960	1600
		3000	1800	2400	3000	300	600	900	1500
		2000	1200	1600	2000	200	400	600	1000
		1000	600	800	1000	100	200	300	500
LBA-40A	4000	4000	2400	3200	4000	-	800	1200	2000
		2000	1200	3200	4000	-	400	600	1000
LBA-50A	5000	5000	3000	4000	5000	-	1000	1500	2500

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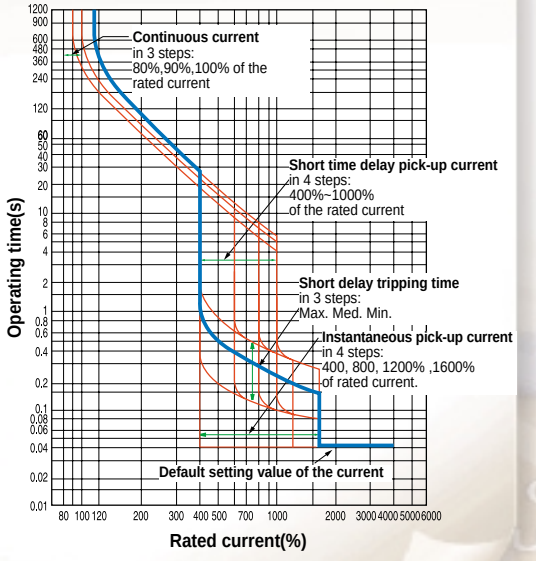
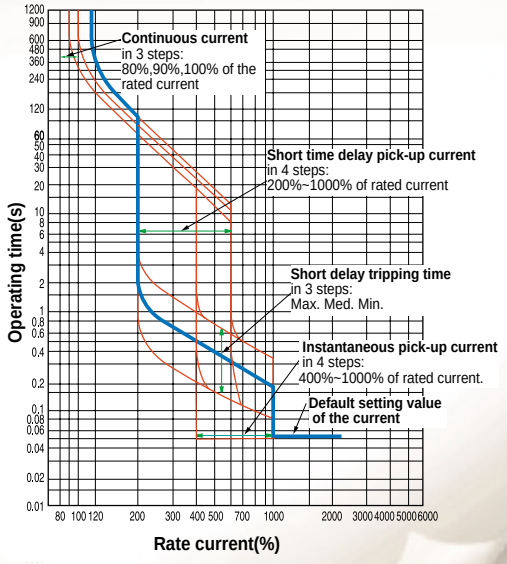
Characteristics of protection

Characteristics of over current protection

LBA-06~32A

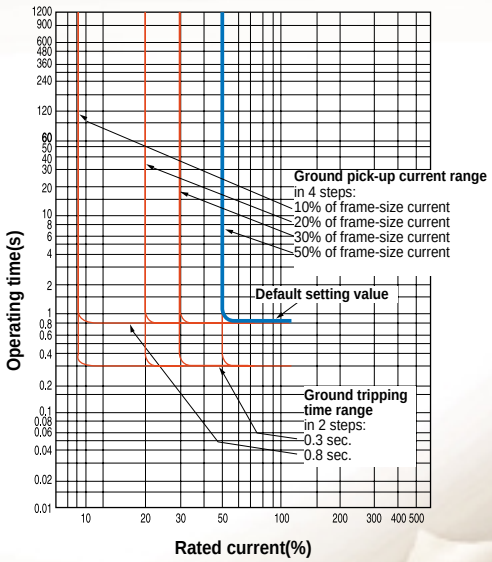


LBA-40~50A

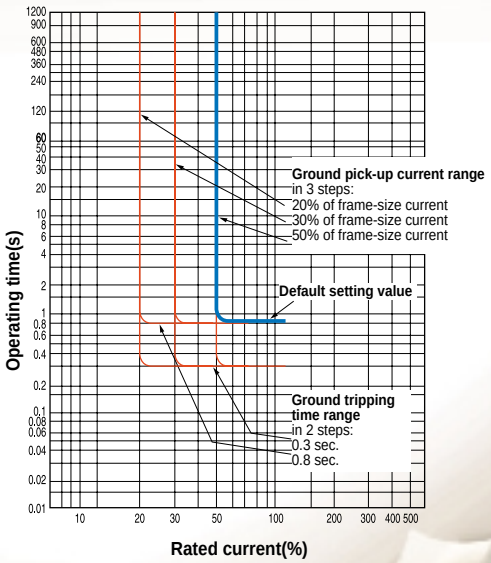


Characteristics of ground-fault protection

LBA-06~32A

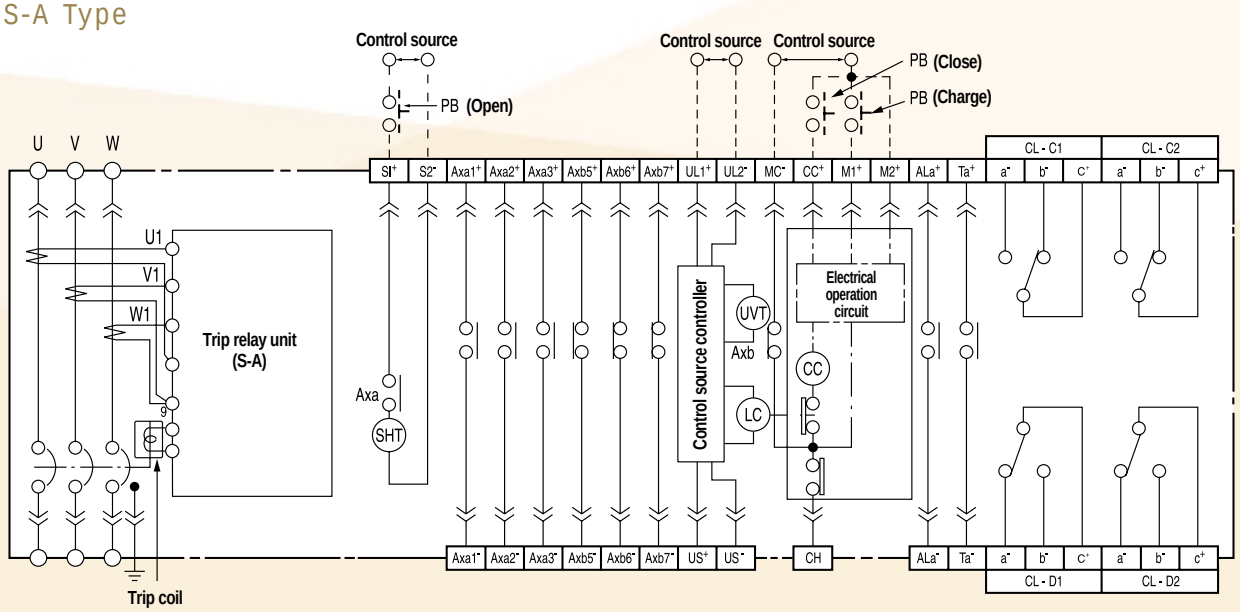


LBA-40~50A



Control Circuit

S-A Type



Main circuit	Trip relay unit	Shunt tripping device	Auxiliary switch	Undervoltage tripping device (lockout coil included)	Electrical control circuit (Motor charging, closing circuit)	OCR alarm switch	Trip switch	Position switch

Trip Relay

- User's wiring
- Plant wiring
- Junction
- Terminal
- SHT — Shunt tripping device
- UVT — Under voltage tripping device
- LC — Lockout coil
- CC — Closing coil
- CH — Charge complete signal output terminal
- S1+ S2- — SHT control source terminal
- US+ US- — UVT short circuit terminal
- UL1+ UL2- — UVT control source terminal
- CC+ — Closing control source terminal
- M1+ — Charging control source terminal
- M2+ — Self-holding charging control source terminal
- MC- — Common terminal for charging and closing

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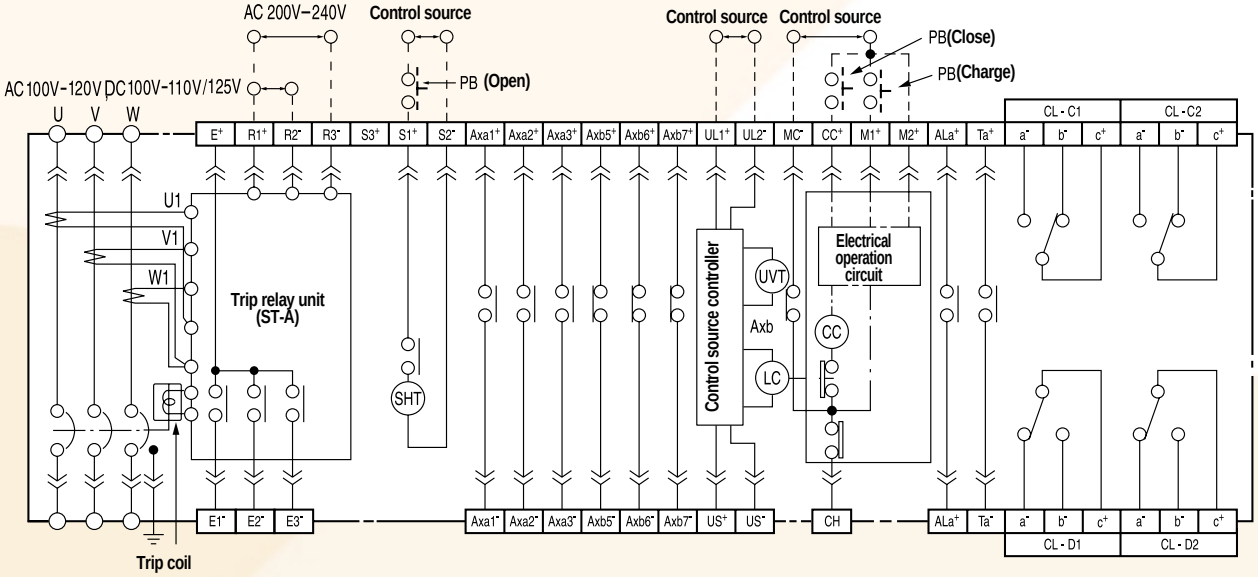
ST-A Type



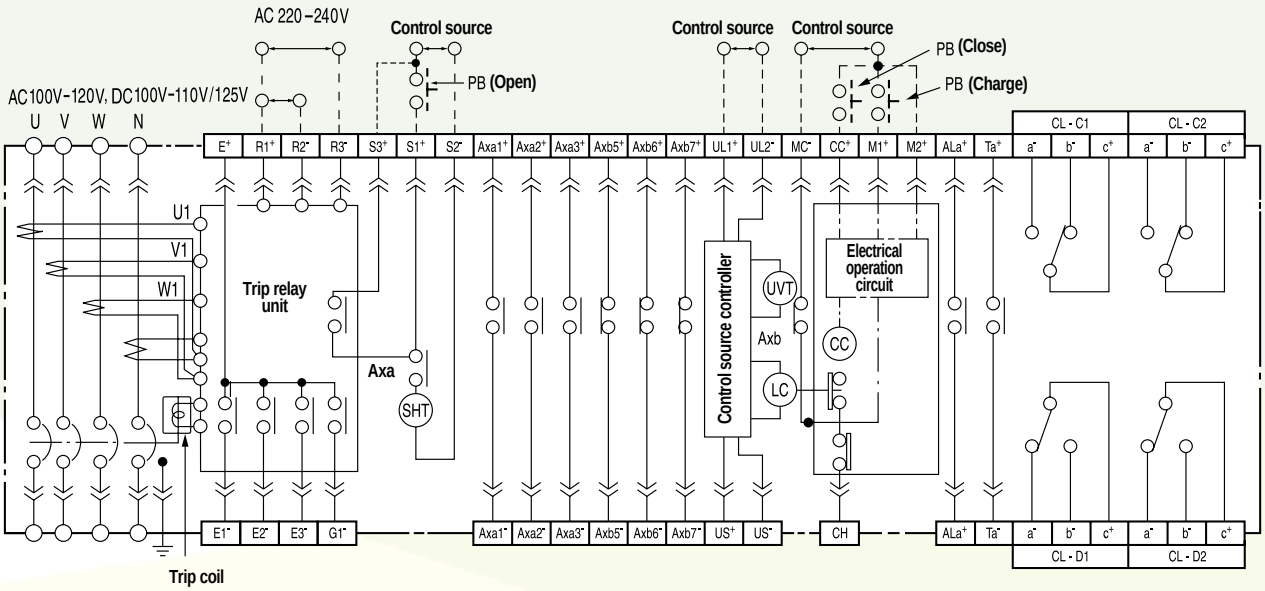
Main circuit	Trip relay unit	Shunt tripping device	Auxiliary switch	Undervoltage tripping device (lockout coil included)	Electrical control circuit (Motor charging, closing circuit)	OCR alarm switch	Trip switch	Position switch

Trip Relay

- User's wiring
- Plant wiring
- Junction
- Terminal
- SHT — Shunt tripping device
- UVT — Under voltage tripping device
- LC — Lockout coil
- CC — Closing coil
- CH — Charge complete signal output terminal
- S1+ S2- — SHT control source terminals
- US- US+ — UVT short circuit terminal
- UL1+ UL2- — UVT control source terminal
- CC+ — Closing control source terminal
- M1+ — Charging control source terminal
- M2+ — Self-holding charging control source terminal
- MC- — Common terminal for charging and closing
- R1+ R2- R3- — Trip indicator control source terminal
- E+ — Trip indicating common terminal
- E1- — Long time delay trip indicating terminal
- E2- — Short time delay trip indicating terminal
- E3- — Instantaneous trip indicating terminal

Control Circuit

SGT-A Type



Main circuit	Trip relay unit	Shunt tripping device	Auxiliary switch	Undervoltage tripping device (lockout coil included)	Electrical control circuit (Motor charging, closing circuit)	OCR alarm switch	Trip switch	Position switch

Trip Relay

- User's wiring
- Plant wiring
- Junction
- Terminal signal
- SHT — Shunt tripping device
- UVT — Under voltage tripping device
- LC — Lockout coil
- CC — Closing coil
- CH — Charge complete signal output terminal
- G1- — Ground fault indicating terminal
- S3+ — UVT short circuit terminal for ground fault trip
- S1+ S2- — SHT control source terminal
- UL1+ UL2- — UVT control source terminal
- CC+ — Closing control source terminal
- M1+ — Charging control source terminal
- M2+ — Self-holding charging control source terminal
- M3- — Self-holding charging control source terminal
- MC- — Common terminal for charging source terminal
- R1+ R2- R3- — Trip indicator control source terminal
- E+ — Trip indicating common terminal
- E1- — Long time delay trip indicating terminal
- E2- — Short time delay trip indicating terminal
- E3- — Instantaneous trip indicating terminal

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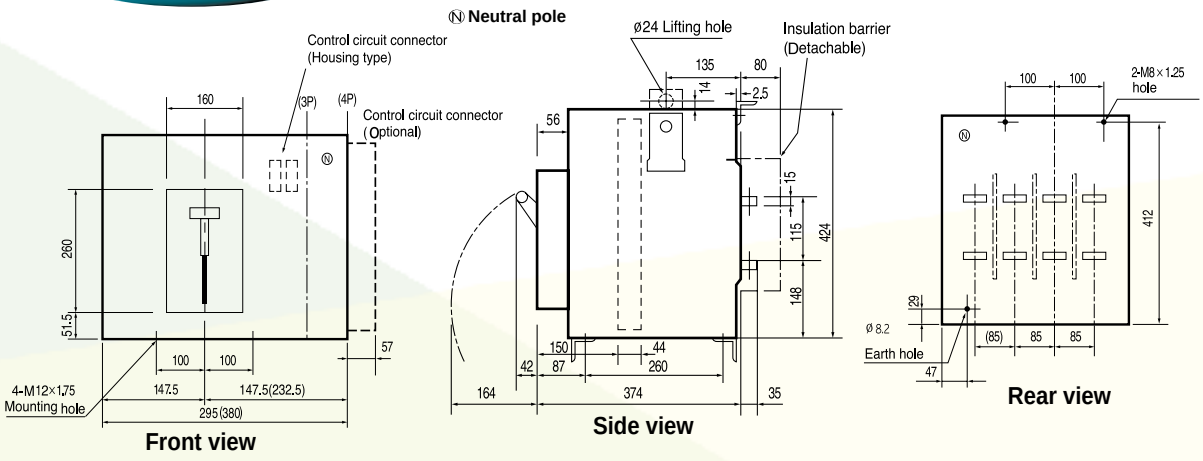
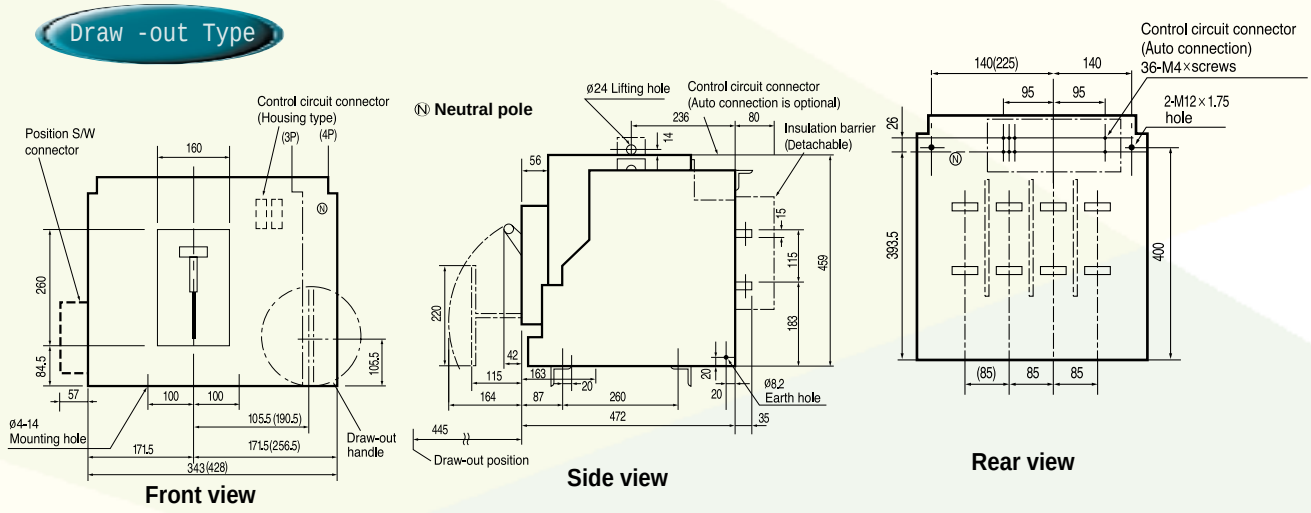
External Dimensions
(LBA-06, 08, 10, 13, 16A)

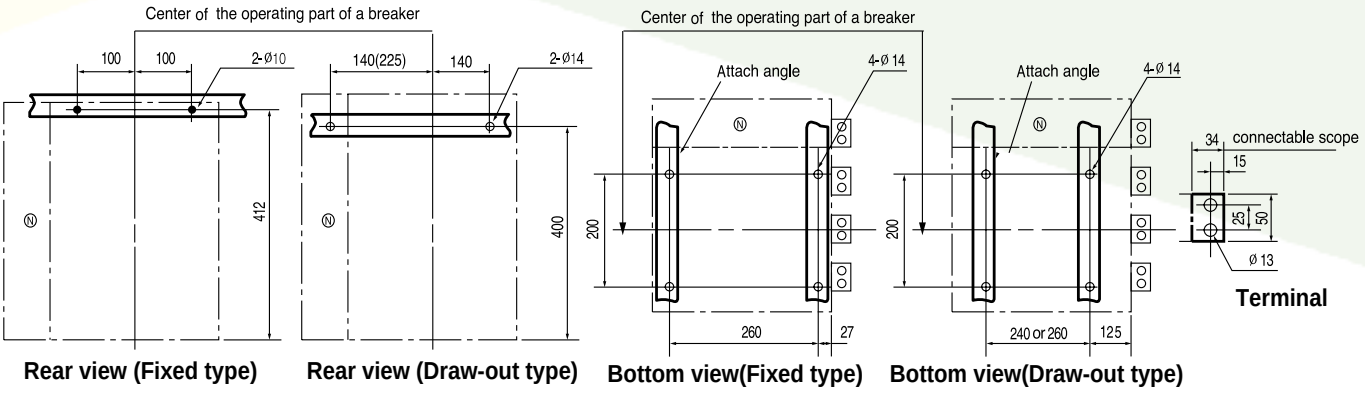
Fixed Type



Draw -out Type



Installation Dimensions



*( ) 4 pole dimensions

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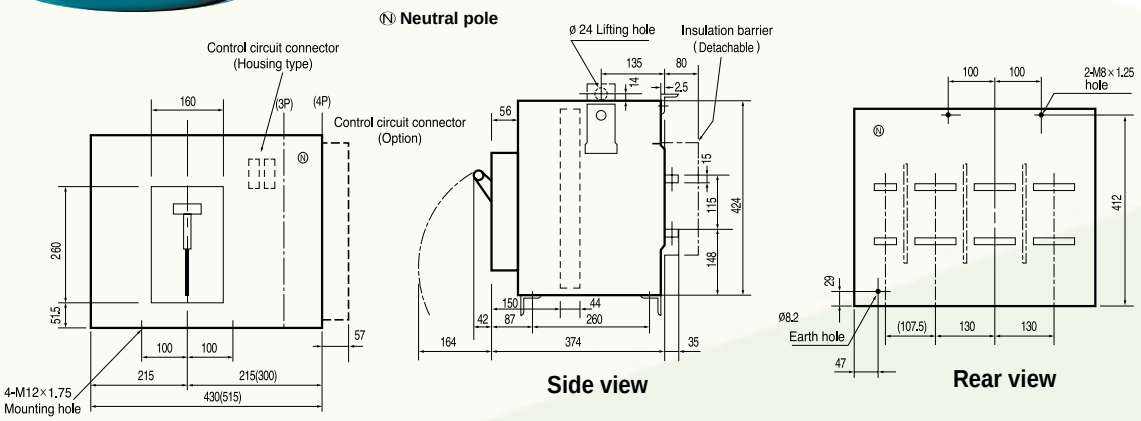
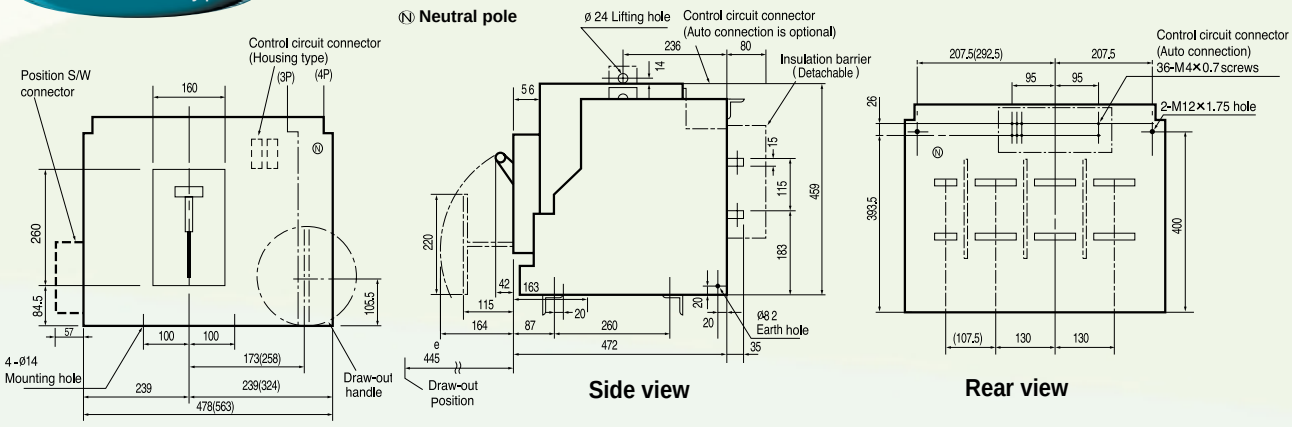
External Dimensions
(LBA-20, 25A)

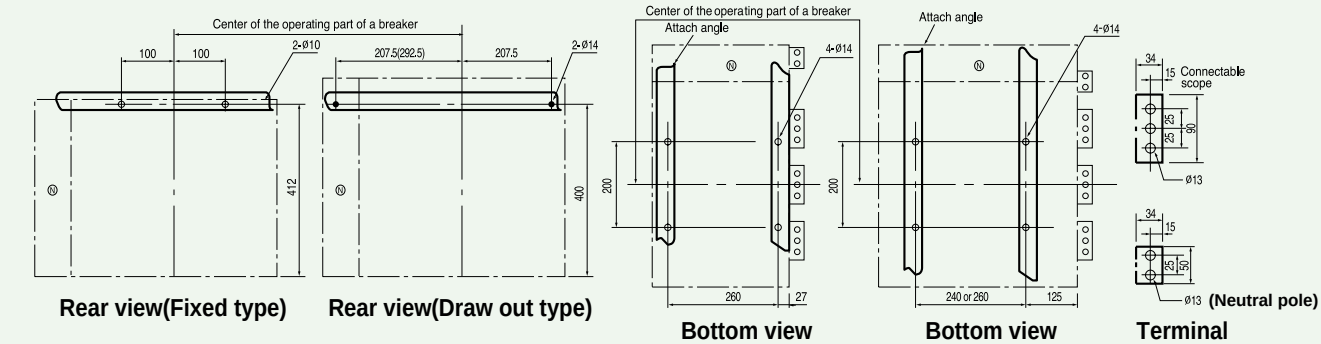
Fixed Type



Draw -out Type



Installation Dimensions



* ( ) 4 pole dimensions

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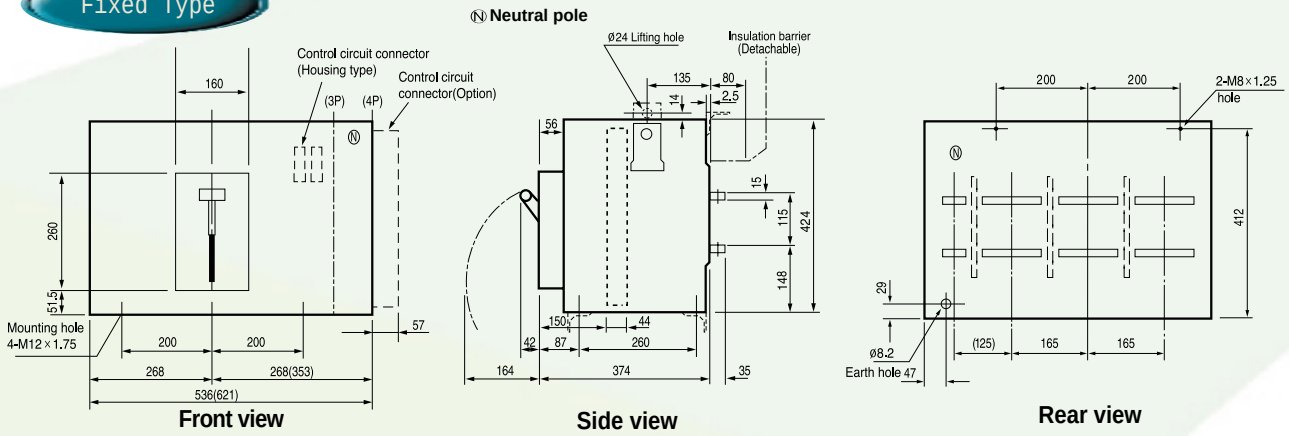
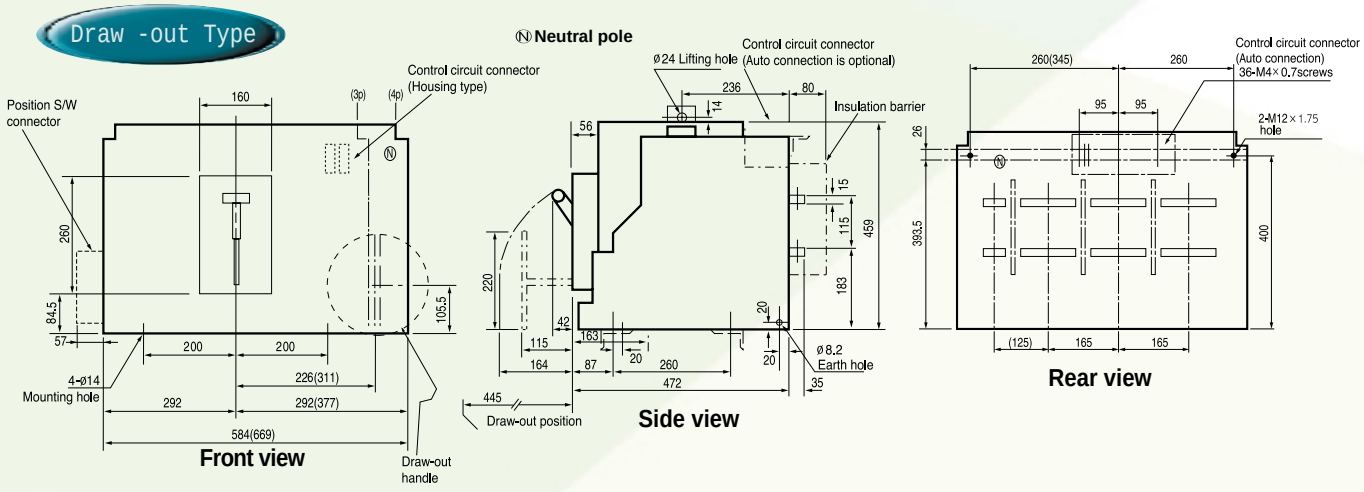
External Dimensions
(LBA-32A)

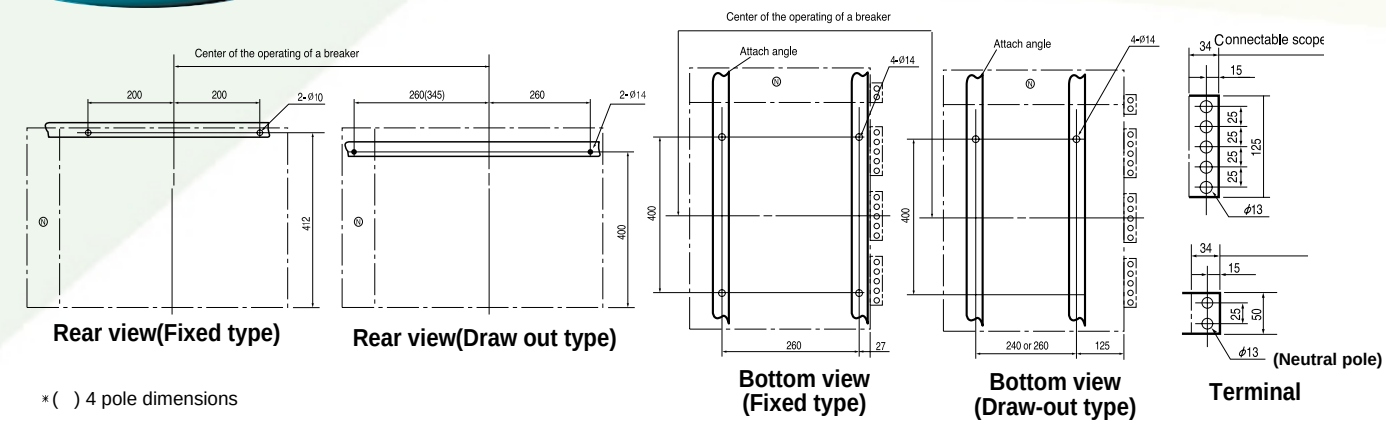
Fixed Type



Draw -out Type



Installation Dimensions



∗( ) 4 pole dimensions

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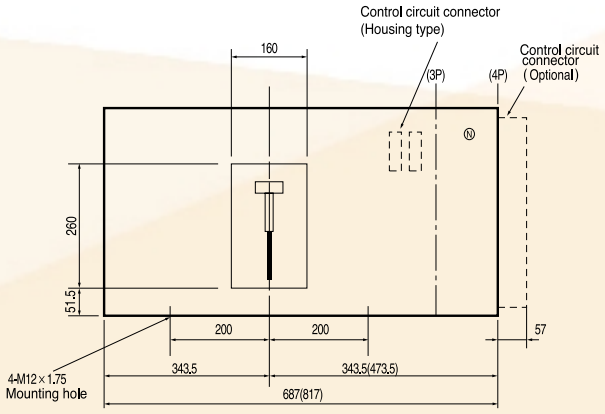
External Dimensions

(LBA-40, 50A)

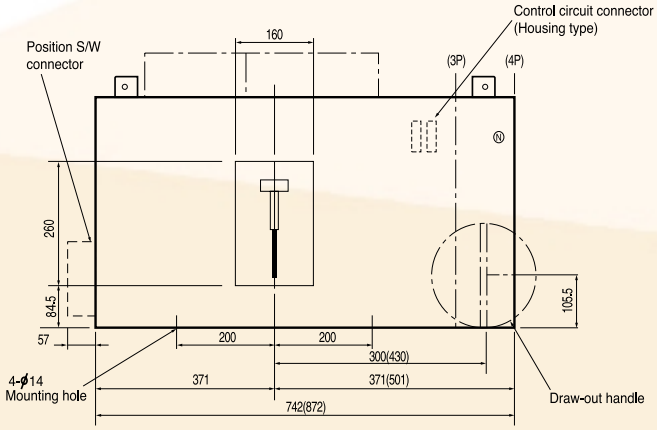
Fixed Type

Draw -out Type

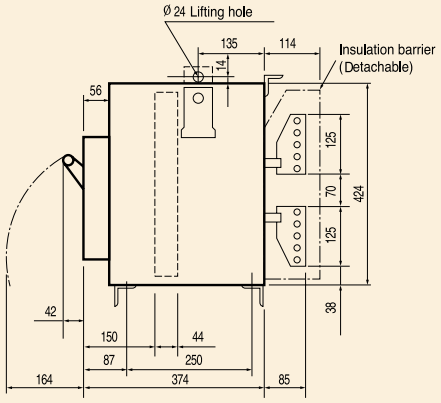
Ⓝ Neutral pole



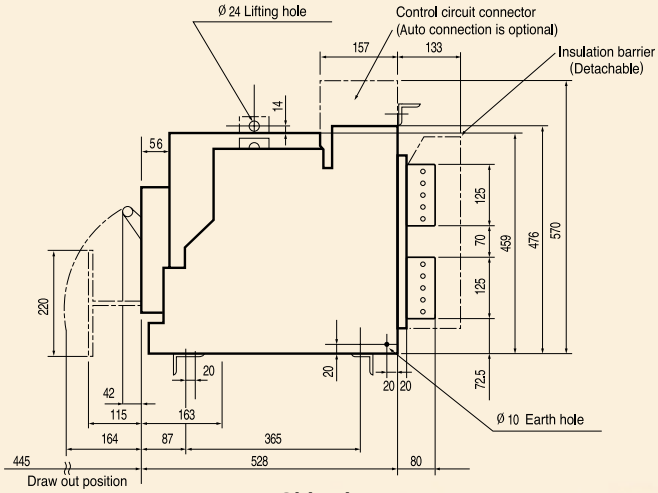
Front view



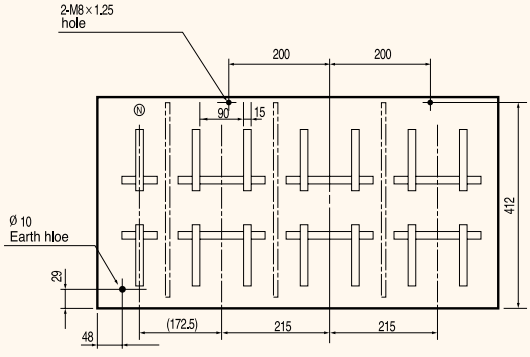
Front view



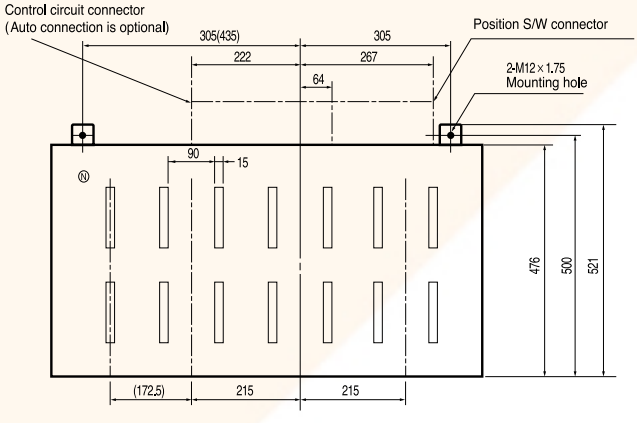
Side view



Side view



Rear view



Rear view

∗( ) 4 pole dimensions

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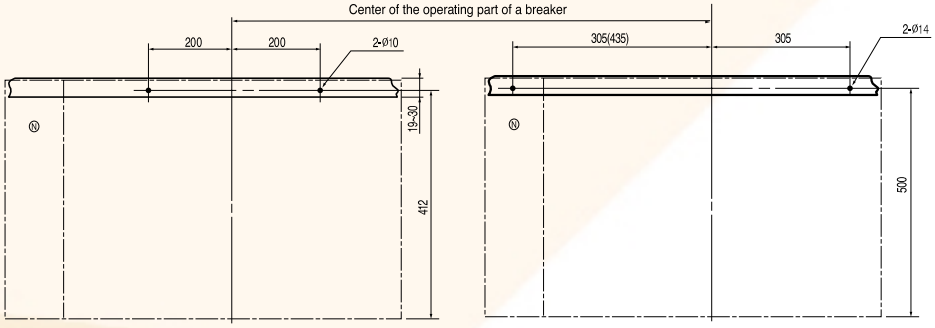
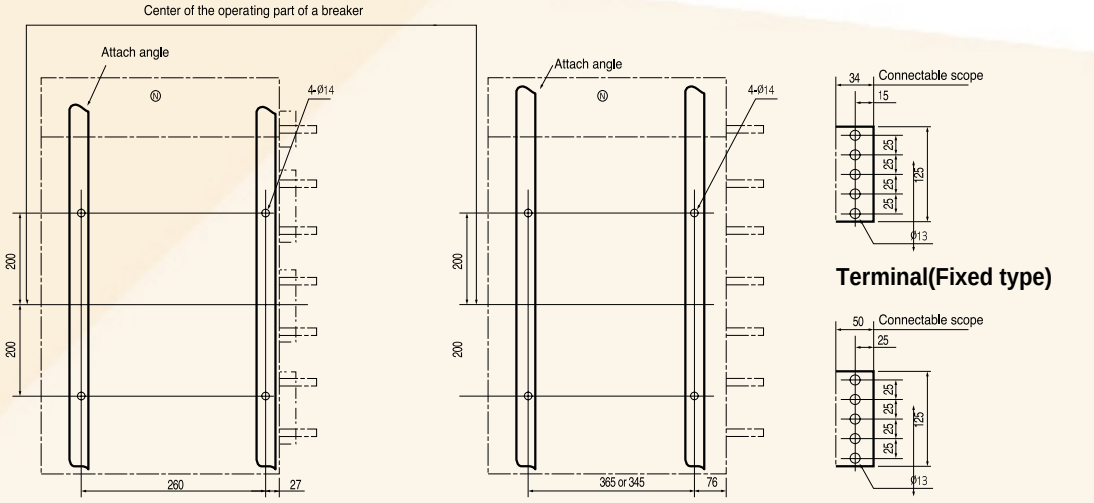
Installation Dimensions



Rear view(Fixed type) **Rear view(Draw-out type)**

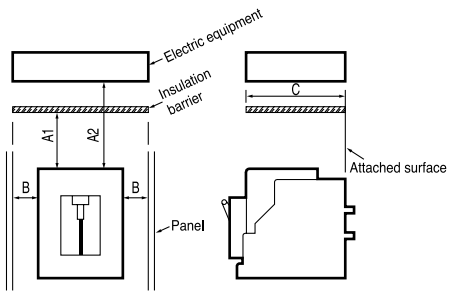


Bottom view(Fixed type) **Bottom view(Draw-out type)** **Terminal(Fixed type)** **Terminal(Draw-out type)**

Arc insulation space

When braking the short circuit current, ionized gas evacuates from the arc extinguish chamber.
In order to allow the gas to evacuate insulation space should be reserved.

Type		LBA-06/08 / 10/13/16 / 20/25A	LBA-32A	LBA-40 /50A
Fixed Type	A1	150	150	200
	A2	200	300	300
	B	100	100	100
	C	320	320	320
Draw-out Type	A1	100	150	200
	A2	200	300	300
	B	100	100	100
	C	418	418	474



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Ordering Information

Circuit breaker			
Rating	V/_____Hz/_____ AF_____	**Number of poles**	☐ 3P ☐ 4P
Mounting configuration	☐ P(Fixed type) ☐ E(with E class cradle) ☐ F (with F_2 class and safety shutter)		
Control circuit connection	☐ Housing type(standard) ☐ Auto connection type		

Control unit		
TYPE	☐ E(Not needed) ☐ S(standard) ☐ ST (standard, trip indicator) ☐ SGT (standard, trip indicator, ground-fault protection)	∗Standard type (combination of L,S,I) ∗L (Long time delay), S (Short time delay), I (Instantaneous)
Control power	S,ST type: ☐ AC 100~120V ☐ AC 200~240V ☐ DC 100~120V ☐ DC 125V	
	SGT type: ☐ AC 100~120V ☐ AC 200~240V ☐ DC 100~110V ☐ DC 125V	

Operation & accessories		
Operating mechanism	☐ manual charge ☐ motor charge	
Rating of motor charging and closing coil (50/60Hz)	☐ AC 100~110V ☐ AC 120V ☐ AC 200~220V ☐ AC 240V ☐ DC 100~125V	
Under voltage trip device(UVT)	☐ Not needed ☐ UVT-S ☐ UVT-05S ☐ AC 100~120V ☐ AC 200~240V ☐ AC 380~460V	
Shunt trip device(SHT)	☐ AC 100~125V ☐ AC 200~220V ☐ AC 240V ☐ DC 100~125V	
Condenser trip device(CTD)	☐ CTD-100 ☐ CTD-200	
Alarm s/w (AL)	☐ Not needed ☐ Needed	
Auxiliary s/w (AX)	☐ 3a3b (standard) ☐ 3a4b ☐ 4a3b ☐ 4a4b	∗Maximum number of AX : • Motor charging type : 4a3b • Shunt trip device : 3a4b • Motor charging + Shunt trip device : 3a3b
Trip s/w (TS)	☐ Not needed ☐ Needed	
Safety shutter(SS)	☐ Not needed ☐ Needed	
Short circuit "b" contact	☐ Not needed ☐ Needed (ea)	
Cell s/w (CL)	☐ Not needed ☐ CL-C (ea), CL-D (ea)	

Mechanical and installation accessories			
Counter (CNT)	☐ Not needed ☐ Needed		
Lockout coil(LC)	☐ AC 100~120V	☐ AC 200~240V	☐ AC 380~460V

※ When ordering, please send us this sheet together.

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Specifications

Ratings

Model	LBA-06A		LBA-10A		LBA-10A		LBA-13A		LBA-16A		LBA-20A		LBA-25A		LBA-32A		LBA-40A		LBA-50A	
Number of poles	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4
Rated current (OCR)	630-504-378 315-252-189 126-101-76		810-640-480		100-800-600 500-400-300 200-160-120		1250-1000-750 630-504-378 500-400-300		1600-1280-960 1000-800-600 500-400-300		2000-1600-1200		2500-2000-1500		3200-2500-1920 2000-1600-1200 1000-800-600		4000-3200-2400 2000-1600-1200		5000-3000-3000	
Standard	IES 947-2, BS 4752, NEMA SG 3, VDE 0660, JEC 160																			

Mounting configuration

Fixed type and draw out type (Manual connection type is standard)

Closing method

Manual charging type and motor charging type (select the control voltage)

Accessories

Accessories	Undervoltage tripping device (UVT)	Shunt tripping device (SHT)	Condenser tripping device (CTD)	Auxiliary switch (AX)	Trip switch (TS)	OCR alarm switch (AL)	Open close counter (CNT)
Maximum number	1	1	1	4a4b	1a	1a	1

The economical type of auxiliary switches are 3a3b, Shunt tripping device is also attached.
If selecting 4a4b as an auxiliary, refer to page 9 of auxiliary switches.

Trip relay(OCR)

Not applicable to economy type

Type	S-A	Standard type (Overcurrent trip characteristics)
	ST-A	Standard + Trip indicator (LED)
	SGT-A	Standard + Trip indicator (LED) + Ground-fault protection

Default setting value of the OCR.	Trip relay unit	
Type	LBA-06/08/10/13/16/20/25/32A	LBA-40/50A
Continuous conductive current	100% of rated current specificed. 100second trip at 200%	
Short-delay triping time	Pick up at 400% of the rated current	Pick up at 200%
Instantaneous pick-up current	Pick up at 1,600% of the rated current	Pick up at 1000%
Ground-fault protection	Pick up at 50% of the rated current. 0.8 second trip.	

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LG constantly endeavors to improve our products, so that information in this catalog is subject to change without notice.

LG Industrial Systems Co., Ltd.

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